



PO No	Supplier	Line Item No	Ref No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due
PO038929	MEC002-VU	2	1	Net 30	M17-4-H1150-R4.000	17-4 SS H1150 Round Bar 4.000" : MATERIAL: 17-4 PH CONDITION H1150 receive ft				6	2/26/2018	6	S042021	Stock	2/13/2018	\$ 145.75 / ft	0		
			10		M70751684.800X5.000	7075-T6S Sheet 4.500" Thick X 5.000" Wide : MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft						9	S042022	Stock	2/13/2018	\$ 182.19 / ft	0		
													Total:	12	15				

Plex 2/13/2018 3:19 PM Dart.Dubois.Pascal



**Castle Metals®**

A. M. Castle & Co.

**PACKING SLIP/  
CERTIFICATE OF CONFORMANCE**

Shipment No:3510196  
Page 1 of 1

Ship From:	Sold To:	Ship To:	Deliver To:				
A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN CA	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7				
Date Shipped	F.O.B.	Freight Terms	Carrier				
12-FEB-18	ORIGIN	Prepaid	MANITOULIN				
Shipment Details	Final Destination Branch - TOR						
Order No	Line No	Item No	Description				
5033885	1	39902.MO	4.0000.RD.17CR-4NI.STAINLESS.CF.H1150.132.0000-156.0000 CUT TO 72 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643 Email P/s and certs to: clavotie@dartaero.com				
Purchase Order No	Part Number	Ordered Qty	Invoice Qty				
38929		1.00 PCS	6.0000 FT				
Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavotie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS						
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
121600080	VALBRUNA CORPORATION		1				256.0164

We hereby certify the material covered by this conformance certificate conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description that appear on file subject to examination. All claims for defective material are waived under the above conditions and writing to A. M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or machined to the correct shape by customer cannot be returned for credit.

Received by Authorized Castle Metals Representative:

ReB# 770 Name:



**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Shipment No:3510196

Page 1 of 1

24038623

Ship From:	Sold To:	Ship To:	Deliver To:
A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA

Date Shipped	F.O.B.	Freight Terms	Carrier	BOL No
12-FEB-18	ORIGIN	Prepaid	MANITOULIN	3510196-2

Shipment Details

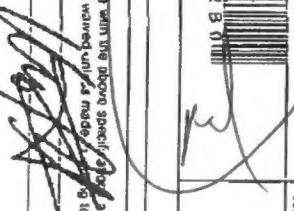
Final Destination Branch - TOR

Order No	Line No	Item No	Description				
5033858	1	12999.MO	4.5000.PL.7075.T651.ALUMINUM. 48.5" X 5" CUT RECTANGLE TO 48.5 IN () X 5 IN () SPECIFICATIONS: AMS-QQ-A-250/12 Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No	Part Number	Ordered Qty	Invoice Qty				
38929		2.00 PCS	2.00 PCS				
Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS						
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
121624210			2				225.5235

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specific requirements of the customer. Any material failing to meet the applicable requirements may be returned to A. M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or modified to the customer's satisfaction, cannot be returned.

Test reports are on file subject to examination. All claims for defective material are waived unless made within 60 days of the shipment. Material cut to the correct size, or modified to the customer's satisfaction, cannot be returned.

Reviewed by Authorized Castle Metals Representative:

  
DRAFT AEROSPACE

2/1/2018  
CNY



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**PURCHASE ORDER  
PO038929**

**Supplier:** MEC002-VU  
Metaux Castle  
P.O. Box 4090 Stn A  
Toronto  
ON  
M5W 0E9 Canada

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**PO No:** PO038929  
**PO Date:** 2/1/18

**Due Date:** 2/26/18

**Purchase Order  
Revision:**

**Revision Date:**

**Ship-To Contact:** Phone:

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**  
FEB 02 2018

**Items**

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M7075T73B4.000x4.000		7075-T73 Bar 4.0 X 4.0 Grain Direction Along 4" Wide : MATERIAL: 7075-T73 OR 7075- T7351/T73510/T73511 BAR PER AMS-QQ-A- 200/11 OR AMS-QQ-A- 225/9 OR AMS 4124 OR AMS-QQ-A-250/12 OR AMS 4078 receive ft	Firmed	2/26/18	48 ft	0 ft	48 ft	\$107.58333/ft	\$5,164.00
<b>Line Item Note:</b> 12 PCS CUT AT 4 FT LONG										
2	M17-4-H1150-R4.000		17-4 SS H1150 Round Bar 4.000" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	2/26/18	6 ft	0 ft	6 ft	\$145.75/ft	\$874.50
3	M7075T6S1.000X5.000		7075-T6 Sheet1" Thick Plate X 5" Wide : MATERIAL: 7075- T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$21.75/ft	\$261.00
4	M7075T6S1.250X2.750		M7075T6S1.250" X2.750" Cut From Plate : MATERIAL: 7075- T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$34.30/ft	\$411.60

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
5	M7075T6S6.000X0.250		7075-T6S Sheet 6" Thick Plate X 0.25" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	36 ft	0 ft	36 ft	\$20.75/ft	\$747.00
6	M7075T6S7.000X2.000		7075-T6S Sheet 7" Thick Plate X 2" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	48 ft	0 ft	48 ft	\$78.52/ft	\$3,768.96
7	M7075T6S0.375X6.000		7075-T6S Sheet .375" Thick Plate X 6" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$25.68/ft	\$308.16
8	M7075T6B1.000X00.250		7075-T6 Bar 1.000' X 0.250" : MATERIAL: 7075-T6 OR T651/T6510/T6511/T62 ALUMINUM BAR AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR PER AMS-QQ-A-200/11 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$9.92/ft	\$119.04
9	M7075T6S2.000X0.750		7075-T6S Sheet 2" Thick Plate X 0.75" Wide : MAT'L 7075-T6/T62 ALUMINUM SHEET SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209  MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$18.47/ft	\$221.64

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
10	M7075T6S4.500X5.000		7075-T6S Sheet 4.500" Thick X 5.000" Wide : MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	6.125 ft	0 ft qft 48.5 inch X 2	6 ft	\$182.19/ft	\$1,115.91
11	M7075T6S1.000X2.500		7075-T6S Sheet 1" Thick Plate X 2.5" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$30.42/ft	\$365.04
12	M7075T6S1.250X2.000		7075-T6 Sheet 1.250" X 2.000" : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$20.12/ft	\$241.44
13	M7075T6S0.375X5.000		M7075T6S0.375 X 5.000 : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$18.10/ft	\$217.20
										Grand Total: \$13,815.49

#### Order Notes

##### Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 part notification by supplier
- A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

# Chantal Lavoie

**From:** Desbiens, Marc <mdesbien@amcastle.com>  
**Sent:** Monday, January 22, 2018 1:34 PM  
**To:** Chantal Lavoie  
**Subject:** RE: quote

Good Morning Chantal,

price an delivery on mat'l.

7075t73 bar 4" x 4" x 12 ft cut in section of 4 ft grain direction along 4"

Offer plate \$ 1291.00 Lot 2-3 weeks

12 Pcs. at 4 ft

17-4 h1150 round bar 4" x 6 ft

\$ 145.75 FT 8-9 days

Bar or sheet acceptable

7075t6 Sheet 1" x 5" x 12 ft \$ 21.75 Ft 2-3 weeks

7075t6 sheet 1.250" x 2.750" x 12 ft \$ 34.30 Ft 2-3 weeks

7075t6 sheet 6" x 0.250" x 36 ft \$ 20.75 Ft 2-3 weeks

7075t6 sheet 7" x 2" x 48 ft \$ 78.52 Ft 2-3 weeks

7075t6 sheet 0.375" x 6" x 12 ft \$ 25.68 Ft 2-3 weeks

7075t6 sheet 1" x 0.250" x 12 ft (2 pcs 6ft) \$ 9.92 Ft 2-3 weeks

7075t6 sheet 2" x 0.750" x 12 ft \$ 18.47 Ft 2-3 weeks

7075t6 sheet 4.5" x 5" x 8 ft cut in section 4 ft 50.125" Long \$ 182.19 Ft 2-3 weeks

7075t6 sheet 1" x 2.5" x 12 ft \$ 30.42 Ft 2-3 weeks

7075t6 sheet 1.250" x 2" x 12 ft \$ 20.12 Ft 2-3 weeks

7075t6 sheet 0.375" x 5" x 12 ft \$ 18.10 Ft 2-3 weeks

303 bar 1" x 3" x 12 ft \$ 107.48 FT 2 weeks

304 bar 0.750" x 2.5" x 12 ft \$ 24.62 FT 8-9 days

304 bar 0.500" x 2.5" 12 ft \$ 19.93 FT 8-9 days

Round bar bronze 2.375" x 1 ft (63000 spec's) Regret

D4970-04L

Thanks

Marc Desbiens  
Inside sales representative  
Castle Metals, Montreal, QC  
Direct line 514-795-8176  
1-800-806-6660 ext 52226  
Fax # 1-855-892-6370

*Customized Supply Chain Solutions for Your Metal Needs*

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M7075+654.500x5.000  
 DATE: FEB 13 2018

PO BATCH NO: 058969/504022

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 9"  
 QUANTITY INSPECTED: 9"  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4500  
 THICKNESS RECEIVED: 4500  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORROSION	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <i>Ans QQ-A-250</i>	
CORRECT THICKNESS	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
PHOTO REQUIRED	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> <input type="checkbox"/> N	<i>Heat # 23487280</i>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> <input type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input type="checkbox"/> <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input type="checkbox"/> <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DURA	DUR C	WES
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

## QC 18 INSPECTION

INSPECTED BY:

DAS

11

9-89

DATE:

FEB 13 2018

## ENGINEERING SIGNOFF (if req)

SIGNED OFF BY:

DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received.

# SPECIFICATION CONTROL DRAWING

△ PURCHASE MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET OR PLATE  
 SPECIFICATION: QQ-A-250/12 OR AMS-QQ-A-250/12  
 OR AMS 4045  
 OR ASTM B209

OR

△ PURCHASE MATERIAL: 7075-T6/T62/T651 ALCLAD ALUMINUM SHEET OR PLATE  
 SPECIFICATION: QQ-A-250/13 OR AMS-QQ-A-250/13  
 OR AMS 4048 / 4049  
 OR ASTM B209

△ PART NUMBER: M7075T6S | TTT | X | W.WWW |  
 THK |  
 WHERE "TTT" = THICKNESS (IN INCHES)  
 AND "W.WWW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)  
 EG. 0.063" THICK SHEET = M7075T6S.063  
 EG. 3.5" WIDE BY 0.50" THICK PLATE = M7075T6S.500X3.500

△ PREFERRED SIZE: .TTT BY 4FT BY 10FT FOR SHEET

B	ADD REF TO PLATE: "T651" TEMPER, AMS 4048, OPTIONAL WIDTH DIM (C4R6-149)	CP	17.05.05
A	NEW ISSUE	RF	10.11.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	CP		
CHECKED	ML	REV. B	
MFG. APPR.	LL	SHEET 1 OF 1	
APPROVED	WM	SCALE	
DE APPR.	DS	NTS	
DATE	17.05.05		

APPROVED

RELEASED  
 2017 JUN 19 ✓  
 ECN 17-574

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 written permission from DART Aerospace, Inc.

1  
 2  
 3  
 4  
 5  
 6  
 7  
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A

A

B

B

C

C

D

D

**SHIP TO:**  
 HADCO METAL TRADING CO. LLC  
 SHIP TO STOCK  
 555 STATE ROAD  
 BENSalem, PA 19020

**SOLD TO:**  
 HADCO METAL TRADING CO. LLC  
 555 STATE ROAD  
 BENSalem, PA 19020

**KAISER**  
**ALUMINUM**

Trentwood Works - Spokane, WA 99215  
 Phone: (800) 367-2586

**CERTIFIED TEST REPORT**

Serial Number  
 4478405



CUSTOMER PO NUMBER:		WORK PACKAGE:	CUSTOMER PART NUMBER:		SHIP RUN/LOAD:	GOVT CONTRACT NUMBER:
098007-6					104044/16	
KAISER ORDER NO		SHIP DATE:	ALLOY:	CLAD:	TEMPER:	PRODUCT DESCRIPTION:
1242581-6		18-SEP-2017	7075	BARE	T651	KaiserSelect Plate
WEIGHT SHIPPED	QUANTITY	TRUCK S/L #:		GAUGE	DIAMETER/WIDTH:	LENGTH:
6446 LB	2 PCS EST.	2069047		4.5000 IN (114.3000 MM)	48.500 IN (1231.0 MM)	144.500 IN (3670.2 MM)

MHU 215105E LOT 234872B0: 1 pieces;  
 MHU 2151059 LOT 234872B0: 1 pieces;

**Certified Specifications**

AMS-4045/RevL

Test Code: 1512  
 Lot: 234872B0 Case 529

AMS-DQ-A-250 12/RevA

ASTM B 209/Rev14

Drop 04

Ingot 5

Melted in USA

(ASTM EB/B557)  
 (EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT + 2 (Min/Max)	69.3 : 70.0 (178 : 183)	54.7 : 55.7 (1277 : 1384)	10.5 : 10.8

(ASTM E1251)

Chemistry	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	V	Zr	Other	Max
Actual(wt%)	0.09	0.18	1.5	0.04	2.5	0.19	5.7	0.03	0.01	0.01	TOT	0.04

**ALLOY LIMITS**

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	V	Zr	Other	Max
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder



Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4478405

## CERTIFICATION

JAMES HEMENWAY, TECHNICAL PROCESS MANAGER

Page 2 of 2

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4-H1150-R4.000

PO: BATCH NO: 028929/5044021

DATE: FEB 13 2018

MATERIAL CERT REC'D: YES

THICKNESS ORDERED: 4.000

QUANTITY RECEIVED: 6"

THICKNESS RECEIVED: 4.000

QUANTITY INSPECTED: 6"

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> <input type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> <input type="radio"/> N	
CORROSION	<input checked="" type="radio"/> <input type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> <input type="radio"/> N	<i>AMS 5643</i>
CORRECT THICKNESS	<input checked="" type="radio"/> <input type="radio"/> N	
PHOTO REQUIRED	<input checked="" type="radio"/> <input type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> <input type="radio"/> N	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> <input type="radio"/> N	<i>Heat # 267900</i>
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> <input type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> <input type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DURA	DUR C
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

*testers located in the Quality Office*

## QC 18 INSPECTION

## ENGINEERING SIGNOFF (if req)

INSPECTED BY: DAS

SIGNED OFF BY: \_\_\_\_\_

DATE: 11

DATE: \_\_\_\_\_

9-89 FEB 13 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received.

# SPECIFICATION CONTROL DRAWING

8	7	6	5	4	3	2	1	0																																				
D																																												
<b>C PURCHASE MATERIAL: 17-4 PH / S17400 / TYPE 630 SS ROUND BAR</b> <b>GRAIN MUST BE ALONG LENGTH OF BAR</b> <b>MINIMUM YIELD STRENGTH PER TABLE</b> <b>MINIMUM ULTIMATE STRENGTH PER TABLE</b>																																												
<b>C SPECIFICATION: AMS 5643 OR ASTM A564</b> <b>C PART NUMBER: M17-4-1HHHHH-R   X.XXX   WHERE: HHHHH SPECIFIES THE MATERIAL CONDITION (PER TABLE BELOW)</b> <b>C O.D.   COND   WHERE: X.XXX = DIAMETER (IN INCHES)</b>																																												
<b>C MATERIAL CONDITION TABLE:</b>																																												
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**VALBRUNA**SLATER STAINLESS, INC.  
2400 TAYLOR STREET WEST - PO BOX 630  
FORT WAYNE IN 46802 USA  
PHONE 260-431-2800 - FAX 260-434-2701**Product Certification Report****Report Number: 5436080**

Certified on Jan 08, 2018 Page 1 of 2

Order ID.	Order Date	Commodity Code	In			
Dim 1	Dim 2	Dim 3	Mat'l ID.	Customer ID.	Customer Purchase Order	
1701428-001	6/27/17	39902			267900 001117	430603
4.0000	.0000	.0000				
Product Shape				Customer Order		
Rounds				17-4		
Length (Inches)		B2 of Length		Weight		
132.000		Min.		156.000		Max. 431460

**Ship To** CASTLE METALS  
26800 MILES ROAD  
BEDFORD HEIGHTS, OH 44146

**VALBRUNA STAINLESS, INC.**  
2400 TAYLOR STREET WEST  
FORT WAYNE, IN 46802

**Sold To****Lifts: 0064**

AISI 630 Condition H-1150  
UNS S17400 AMS 2303F  
ASME SA 564-13 ASTMA 564-13 Type 630

3174-04 REV 41  
AMS 5640U**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta
.038	.48	.023	.021	.44	15.73	4.40	.21	3.22	.031	.282	.0026
Cb+Ta											
.2846											

**BRINELL Type A device E10-15a**

HBW

312

**ROOM TEMP TENSILE ASTM E8-16a**

TS (PSI)	.2%YS (PSI)	%EL (4d)	%RA
141400	111600	20.4	58.4

**CHARPY V NOTCH E23-16b 10x10mm**

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	%SHR	%SHR	%SHR	Avg FT LB	
70	90	92	86	61	55	56	70	70	70	89	
AVG LAT EX		AVG % SHEAR		57		70					

**MAGNETIC PARTICLE to AMS2303F**

FREQ SEV

AVG .00 .00

**MACRO ASTM E340-15/E381-01(12)**

MACRO

OK

OK

OK

**PERCENT FERRITE (AMS 2315G)**

% FERRITE Etchant Magnification X

AVG .4 Marbles 100

Solution heat treated at 1900 degrees F plus or minus 25 degrees, one hour minimum and air cooled.

Heat treated at 1150 degrees F for 4 hours and air cooled.

Reduction ratio 5 To 1 Min.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

*Tad Landwehr*email: [TLandwehr@valbruna.us](mailto:TLandwehr@valbruna.us)

Tad Landwehr



**VALBRUNA**

SLATER STAINLESS, INC.  
2400 TAYLOR STREET WEST - PO BOX 630  
FORT WAYNE, IN 46802 USA  
PHONE 260-424-2800 • FAX 260-424-2801

**Product Certification Report****Report Number: 5436080****Certified on Jan 08, 2018 Page 2 of 2**

Order I.D.	Order Date	Commodity Code	Heat I.D.	Customer I.D.	Customer Purchase Order	
1701428 001	6/27/17	39902				
Dim 1	Dim 2	Dim 3	Product Surface			
4.0000	.0000	.0000	267900 001117			
Product Shape	Centerless Ground/Cold Finish				Customer Grade	
<b>Rounds</b>					<b>17-4</b>	
Length (Inches)	Min.		Max.	431460	Weight	
132.000						

**Ship To**  
CASTLE METALS  
26800 MILES ROAD  
BEDFORD HEIGHTS, OH 44146

**Sold To**  
VALBRUNA STAINLESS, INC.  
2400 TAYLOR STREET WEST  
FORT WAYNE, IN 46802

Electric Furnace melted; AOD refined.  
Chemical testing to one or more of the listed ASTM methods:  
E1019-11, E1086-14.  
Location of tensile fracture: inside middle of gage length. %elong after fracture.  
Chemical Analysis performed at Acciaierie Valbruna, Italy.  
No mercury or low melting alloy contamination. No weld repair.  
Material melted in Italy, manufactured in the United States.  
Material conforms to listed specifications. DFARS compliant. Our heat treat furnaces use air atmosphere.  
Quality system is compliant with ISO 9001:2015. Produced in accordance with EN 10204 3.1.

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Manager Laboratory Services *Tad Landwehr*

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